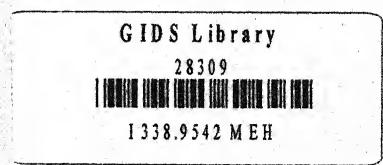


INFRASTRUCTURE AND ITS IMPACT ON THE PROCESS OF DEVELOPMENT

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INFRASTRUCTURE

Development of infrastructural facilities, both economic and social, are considered to be the most important and instrumental to the promotion, development and diversification of various economic activities. In Uttarakhand, considerable attention has been provided in the expansion of educational facilities both in rural and urban areas. The elementary level of educational facilities are mainly provided by the State Government however, some efforts have also been made by the private organizations and individuals to expand primary education in urban areas during recent past.

According to the Basic Education Department, the primary education facility has been provided in each village panchayat in uttarakhand. The total number of Junior Basic and Senior Basic Schools existing at present are 8679 and 1829 respectively. Over half of the villages have a Junior Basic School facility within the village; another 24 per cent have one within one kilometre. However, the children of around 24 per cent and another 2 per cent have to cover one to three kilometres distance and above 3 kms. respectively for the availment of Junior Basic School facilities.

Consequently, around half of the villages have a Senior Basic School facility within a three kilometres distance. Among the districts, Dehradun is best placed in terms of accessibility to Junior Basic Schools, with 76 per cent of the villages having a school within and another 10 per cent having one within one kilometre. Even in other districts, at least 75 per cent of villages have a school within one kilometre, except for Pithoragarh and Pauri Garhwal which only fall marginally short of this figure.

Significant progress has also been attempted in the expansion of secondary level educational institutions in the region. The total number of schools has increased from 650 in 1981 to 1192 in 1994 showing an annual increase of around 6 per cent. It is also noticed that nearly 66 per cent of total existing secondary schools are alone concentrated in the rural areas. However, the expansion of schools for boys has been carried out significantly at larger level as compared to the schools for girls. This is indicated by the fact that between the period 1980-81 and 1993-94, the growth of schools for boys has been estimated at 28 per cent as against 26 per cent schools for girls. But the expansion of this level of educational facility has been done well in rural areas than in urban areas of the region. The number of Junior Basic and Senior Basic Schools per lakh of population are 143 and 30 respectively, while the figure for secondary schools accounts for 19 only. During 1992-93, the number of ITI was 50 and over 8 thousand students were enrolled with

these institutions. In addition to this, around 1.5 thousand children were also imparting training in 15 Polytechnics which were existing in the region upto 1992-93. The ratio of technical educational institutions, such as industrial training institutions and polytechnics, to one lakh population is 1.06 and 0.29 respectively. The plan outlay for the development of education sector was 218.50 crores for Eighth Plan and it has increased to 313.73 crores for Ninth Plan period. However, the share of outlay for education to the total outlay for Uttarakhand has declined from 10.30 per cent in Eighth Plan to 9.08 per cent in Ninth Plan period.

Significant emphasis has also been provided in the expansion of medical and health facilities in Uttarakhand during the past Plans. The amount of outlay proposed for developing and expansion of medical facility was 65 crores during eighth plan period and it increased to 71 crores for ninth plan. Number of allopathic hospitals and dispensaries per lakh of population are significantly much higher (11.81) in Uttarakhand than at state level (4.63). Further, there are 233 primary health centres, 1366 sub-health centres and 14 community health centres to provide facility for basic health needs in the region. However, these facilities are inadequate according to the nationally accepted norms of one centre for 20,000 people. There is one primary health centre for about 28 thousand people on an average.

In terms of drinking water facilities in the region is concerned, a significant number of villages are lacking this

facility. Although, efforts were made to overcome from this problem through the expansion of piped water supply programme in the past, yet, this problem is acute in remote and in accessible mountain areas. Also, due to increasing deforestation and environmental degradation in various areas of Uttarakhand the discharge of natural water sources has been considerably reduced. In fact, the underground water level has been reduced at larger extent. Only in less than 50 per cent villages, the spring have either used to yield water or sprout water only during rainy season, when already sufficient rain or surface water is available. Decrease in spring discharge ranging from 25 per cent to 75 per cent and resulting in the sprint-fed rivers have gone down considerably - 30 to 40 per cent during the last decade.¹ Indeed most of the lesser Himalayan rivers and streams are afflicted too little too much water syndrome.

There are certain cases in Uttarakhand that the numbers of drinking water schemes and programme were introduced but on the part of government inability to properly supervise, lack of proper knowledge about the capacity of water resources in generating or discharging the volume of water during summer season and untimely release of finances to meet the construction cost of the projects, a significant members of such schemes and programmes are not completed. These schemes also need renovation and re-organization to fulfil the imperative needs of water supply.

It is reported² that all the 54 towns of Uttarakhand are supplied with safe drinking water but in many towns the quantity of water is not adequate as per norms due to rapid increase in population, extension of area and reduction of water discharge level in the sources. It is claimed by the Government that upto the end of Eighth Plan period, around 71 per cent of the total villages have been provided the facility of drinking water. Another over one-fourth of the villages are availing the drinking water facility partially. But, still, 324 villages are lacking the facility of drinking water in absolute term. All the villages of districts Uttarkashi and Dehradun have atleast some facility of drinking water but over one-half of the total village of Dehradun are partially connected with this facility.

Similarly, significant progress has been made in providing electricity both in rural as well as in urban areas. Electricity is mainly used for domestic purposes such as lighting, heating and cooking. The proportion of villages having the facility of electricity increased from 27.17 per cent in 1980-81 to 75.53 per cent in 1991-92 and 78.80 per cent by the end of 1996-97. All the villages in Dehradun are electrified while lowest proportions of villages of Pauri Garhwal (69.9 per cent) followed by Tehri Garhwal (74.1 per cent) are availing the facility of electricity. The per capita consumption of electricity was 83.4 kwh. in 1980-81 and it rose to 217.10 kwh in 1990-91.

TABLE 1 : STATUS OF DRINKING WATER SUPPLY

District	Total No. of Villages	Availability of Drinking Water		
		Fully	Partially	Not at all
Uttarkashi	662 (100.00)	505 (76.28)	157 (23.72)	-
Chamoli	1553 (100.00)	1194 (76.88)	331 (21.31)	28 (1.80)
Tehri Garhwal	1945 (100.00)	1238 (63.65)	640 (32.90)	67 (3.44)
Dehradun	725 (100.00)	356 (49.10)	369 (50.90)	-
Pauri Garhwal	3181 (100.00)	2700 (84.88)	402 (12.64)	79 (2.48)
Pithoragarh	2171 (100.00)	1606 (73.97)	517 (23.81)	46 (2.21)
Almora	3009 (100.00)	2236 (74.31)	686 (22.80)	87 (2.89)
Nainital	1749 (100.00)	809 (46.26)	925 (52.89)	15 (0.86)
Total	14995 (100.00)	10644 (70.98)	4027 (26.86)	324 (2.16)

Source : Draft Ninth Five Year Plan (1997-2002), Uttarakhand Sub-Plan, Lucknow, U.P.

The communication system in the region is poorly developed. However, during the recent past the telephone facility have become available in district headquarters and small towns. Still, there are only 395 telephone connections per lakh of population. The number of post offices per lakh

of population are only 12.0 but the figure is much higher for district Pithoragarh (18.3) closely followed by Almora (17.0), Chamoli (16.8) and Pauri Garhwal (13.2). Population per bank branch in 1993 was 8.41 thousands while the credit deposit ratio was estimated to be 23.62 per cent as against 36.25 per cent for state average. In fact, it was very low at 13.40 per cent for Pauri Garhwal, 13.80 per cent for Chamoli and 14.19 per cent for Tehri Garhwal while the corresponding figure reaches as high as 52.13 per cent for Nainital and 30.90 per cent for Dehradun.

As far as the development of transportation means is concerned it revealed that more and more emphasis has been given for increasing the length of roads and linking increasing number of villages with the road network. The road transport is the main mode of transportation in Uttarakhand, though little use of horses, ponies and other animals is carried out for transportation of goods in few areas. The length of pucca road per lakh of population has increased from 49.3 kms. in 1960-61 (pre-Chinese War) to 163.15 kms. in 1980-81 and 200.91 kms. in 1994-95. Basically the motive behind the construction of roads at increasing level was non-economic factor, i.e. Defence and secondly of course the economic development of the region.³ The metalled road, passes through 35 per cent of the villages, is within one kilometre of nine per cent of the villages; within one to three kms. of 17 per cent villages; and within three to five kms. of 13 per cent of the villages. Inhabitants of 26 per

cent of the villages had to walk more than 5 kilometres to reach a metalled road. Accessibility is much better in Nainital and Pauri Garhwal districts, with 81 and 55 per cent of the villages having a road passing through them, and rather poor in Uttarkashi, Pithoragarh and Tehri Garhwal where inhabitants from over one-third of the villages have to walk over five kilometres to reach a road.⁴ The length of road per 1000 sq.kms. of area in 1994-95 was 246.01 kms. however it was only 95.68 kms. in Uttarkashi followed by 131.60 kms. in Chamoli, 132.11 kms. in Pithoragarh but it was highest in Dehradun 472.12 kms. followed by 408.24 kms. in Pauri Garhwal. However, the process of road development, in terms of the density of road, in Uttarakhand is much below the norms laid down by Indian Road Congress in the road development plan, 1982-2001, for mountain and hilly areas. The density of roads in Uttarakhand is works out to be 31.43 kms. per 100 sq. kms. area is much less than the IRC recommendation of 40 Kms./100 sq.km.⁵

IMPACT OF INFRASTRUCTURE ON DEVELOPMENT

The preceding analysis has well depicted the fact that the infrastructural facilities of different kinds are well developed in Uttarakhand. However, the contribution of various infrastructural facilities in the process of overall economic development in general and in the diversification of various economic sectors in particular would possibly depend on the level and extent at which the initiatives for

developing various social and physical infrastructure have considered for the necessities and requirements associated to different sectors of the economy. In general the pattern of development of various categories of infrastructural facilities should be based on the demands of specific areas, economic sector's specific and the perceptions of local people. At the same time the impact of available various infrastructural facilities in any area specific is more generally influenced by the extent and level of its utilization pattern. For instance the expansion of educational facilities and development of road transport network in Uttarakhand has been undertaken in an impressive manner. But its contribution on the process of development, in improving the quality of life and standard of living of local people will determine and govern by the pattern of utilization and the purpose of people behind the utilization of these facilities.

UTILIZATION OF EDUCATION

(i) Enrolments

It has been well recognised that imparting education among human resources implies improvements in cognitive ability, technical skill and knowledge, productive efficiency and mobility in different occupations and geographical areas, and as a consequence, raising earnings and their income levels and also increasing contribution to economic

development. Besides the general contribution that education makes to economic development, it is also considered a potent instrument for bringing about equality of economic opportunities among different segments of the population. So it is plausible that education can compensate for lack of material assets, so as to improve socio-economic conditions of people, who own little or no asset and have been socio-economically backward for the past several generations and thus influences a degree of socio-economic equality, despite inequality in the ownership of material resources.⁶

Recognising the value of education in terms of its role in influencing social and economic change, national integration and as an important source for a transformation of the system to relate it more closely to the life of the people and reducing the problems of socio-economic inequality among them, education has always been accorded an important and honoured place in Indian society. Therefore, an increasing emphasis has been provided to impart education among the socially and economically disadvantaged groups of people. In Uttarakhand, significant emphasis has been provided in the expansion of different levels of educational facilities in different locations of the region. Increasing emphasis has also been made to cover increasingly the remote areas and areas dominated by scheduled castes and scheduled tribes population so that each socio-economic groups of population living in different remote and developed areas can equally participate in educational system. Considering the

geographical and topographical problems existing in the region, relaxation in the norms fixed for the establishment of primary level school facilities based on minimum coverage of population size and the distance of villages to nearest school is also made. During recent past initiatives have also been taken to appoint atleast one woman teacher in every school. This has been done on the understanding that women teachers can better understand the psychology and problems of the children and to motivate children to learn and benefit from the educational activities in the school, and they can also be instrumental in getting more girls into the schools and retaining them in the availment of education.

Expansion in education facilities is necessary but not a sufficient condition for the different socio-economic groups of population to attain its benefits in terms of employment and income opportunities. What is much more important is the extent to which different levels of educational facilities are utilized by these disadvantaged groups. Success in providing educational opportunities can be meaningful only when various groups of population utilize it fully and equitably.⁷ We shall now, therefore, examine the existing pattern of utilization of educational facilities in terms of enrolment, drop-out, retention and performance in availing education in general and among different groups of population, i.e. boys and girls, rural and urban population and general castes and scheduled tribes in the region.

The analysis based on secondary data collected from the office of education directorate revealed that during 1994-95, around 1051 thousand children were enrolled in primary level of education, 208 thousand in middle level of education, 460 thousand in secondary education and 46 thousand in higher educational (degree and post-graduate levels) systems in Uttarakhand. In all over 1764 thousand children were imparting various level of education in the region. Comparing the enrolments of children attaining schools between the period 1980 and 1994 we find the pattern of utilization of different levels of education by the children is consistently increasing over the years. Overall growth of 8.35 per cent has been estimated for the children imparting

TABLE 2 : ENROLMENTS OF CHILDREN IN DIFFERENT LEVELS OF EDUCATION

Level of Education	1980			1994			Annual Growth		
	Boys	Girls	Total	Boys	Girls	Total	Boy	Girl	Total
Primary	307.69 (62.90)	181.50 (37.10)	489.19 (100.00)	616.65 (58.70)	434.23 (41.32)	1050.88 (100.00)	7.17	9.95	8.20
Middle	49.18 (73.41)	17.81 (26.59)	66.99 (100.00)	131.35 (63.25)	76.31 (36.45)	207.66 (100.00)	11.93	23.46	15.00
Secondary	176.02 (73.81)	62.45 (26.18)	238.47 (100.00)	298.38 (64.87)	161.61 (35.13)	459.99 (100.00)	4.97	11.34	6.64
Higher	N.A.	N.A.	18.50	N.A.	N.A.	45.59	N.A.	N.A.	10.46
Total	532.89	261.76	813.15	1046.38	672.15	1764.12	N.A.	N.A.	8.35

Source : Shikshya Ke Pragati, Directorate of Education, Allahabad, Uttar Pradesh, 1980-81 and 1994-95.

education. Annual increase in the growth of enrolments has been recorded significantly highest at middle level educational system (15.00 per cent) followed by higher educational level (10.46 per cent), primary level (8.20 per cent) and lowest growth rate of only around 7 per cent is registered for children enrolled at secondary level of educational system.

Girls and Boys

Further, a look into the availment pattern of different educational levels of boys and girls revealed that the enrolments of both the groups of children are consistently increasing in all the educational levels. But the participation of girls at different levels of education is lagging far behind the boys. In all around 617 thousand boys and 434 thousand girls are enrolled in primary education. In middle level education the number of boys is 131 thousand as against 76 thousand girls, but the number of children enrolled in secondary level education picked up to 298 thousand for boys and 162 thousand for girls. The participation of girls is below the level of boys at each level of education and it declined with the increase of educational level. At primary educational level, the participation of girls is 41.32 per cent as against 59 per cent for boys but it declined at 37 per cent at middle level and further reached at 35 per cent points at secondary level education.

However, the enrolments of girls are increasing fastly as compared to boys at different levels of education. In fact, the proportion of girls participating in different education are largely increasing while the participation of boys is showing a declining trend. At primary level of education the participation of girls increased from 37.10 per cent to 41.32 per cent as against a decline from 62.90 per cent to 58.70 per cent for boys with an annual growth of 9.95 per cent for girls and 7.17 per cent for the boys during 1980 to 1994. Significantly larger inequality in the availment of middle and secondary levels of education was prevailing against girls during 1980 which has, however, further reduced at considerable extent in 1994. In fact the enrolments of girls are increasing at much higher extent than the boys at both middle as well as secondary level of education. The growth of enrolments for girls at middle educational level was over 23 per cent as against 12 per cent for boys and it was 11 per cent for girls and around 5 per cent for boys at secondary level of education during the reference period. An overall assessment reveals that there are clear cut inequalities in the participation of education among different sexes but the performance of girls is more remarkable than the boys in availing education. Even the enrolments are greatly increasing in favour of girls than the boys. And, finally the growth rates of enrolments of girls are almost double than that of boys at middle and secondary level of education.

Considering the age-specific enrolment rates of children at different educational levels it also revealed the fact that the enrolment rates of girls are marginally lower than the boys in Uttarakhand. A study⁸ undertaken in district Almora finds that the enrolment rates of boys were 94.63 per cent as against 91.67 per cent for girls at primary level education. However, in most of the blocks the enrolment rates of girls and boys were more or less similar except in one or two blocks. However, in socio-economically most backward blocks such as Kapkote the enrolment of both boys and girls were low, though the enrolments rates among girls were relatively higher. It was found that both school related problems as well as poor socio-economic background of children were the main factor associated with the poor enrolment of children in primary school. The villages were very small in size and the settlements were widely dispersed so a significant proportion of children of these villages have to cover long distances of 4 to 6 kms. to reach schools. Though in many non-accessible areas like Dhauladevi block, NGOs were involved in providing pre-primary education extending even upto Class II. The poor socio-economic background of parents was also a contributing factor to non-enrolment in many parts of the region. Older girls, especially, were needed in the house to look after their younger siblings when their mothers go to forest to collect firewood and fodder. Some of these children were also found collecting forest products for its sale to the contractors.

General Castes and Scheduled Castes/Tribes

In the past, various efforts have been carried out different planned development strategies to bring increasing number of children from socio-economically backward communities in the education system. In this regard the SC/ST students are given general and residential scholarships, specially coaching facilities at different educational levels by Government departments concerned. Under the provision of opportunity cost system, SC/ST girls and boys are provided scholarships and other financial incentives, starting from class I in the region. Increasing attention is also being given to the expansion of primary educational schools in the recently identified Ambedkar Villages dominated by Scheduled Castes and Scheduled Tribes. Relaxation in criteria of opening schools for these areas is also strictly followed. All the school-going children at the primary school level have been covered under the provision of scholarships so as to attract them to enroll themselves in schools. For the purpose of efficient and proper distribution of scholarship and other incentives among SC/ST children the Village Education Committee (VEC), headed by the Village Pradhan and the Headmaster of the school concerned and a representative among the parents of SC/ST children as the member, has been formed. The amount of scholarship is to be distributed among SC/ST children every year in two instalments in the presence of VEC.

In spite of the fact that considerable efforts has been placed for increasing the rates of enrolments, retention and educational performance and to bring reductions in the drop-outs of SC/ST children in Uttarakhand the educational performance of general caste children, both girls and boys is noticed comparatively better than the SC/ST children. The analysis based on data obtained from the office of Basic Education Officer revealed that the enrolment rates of upper castes children are 94.35 per cent as against 89.52 per cent for scheduled castes and 83.81 per cent for scheduled tribes children. Also the SC/ST girls are lagging far behind their male counterpart in the availment of primary education. The enrolment rates of general caste boys were 95.38 per cent as against 92.46 per cent for SC boys and 89.17 per cent in the case of ST boys. Similarly in the case of girls the enrolment rates were 93.30 per cent, 86.20 per cent and 78.74 per cent in the case of general castes, SC and ST groups of children respectively. The differences in the enrolment rates of general caste and SC/ST girls was reported to be quite sharp. However, examining the data on the age specific actual enrolment and final analysis carried out by the basic education department in the calculation of enrolment rates of different groups of children a remarkable discrepancy was appeared in this regard. Therefore, we had carried a detailed survey through personal visit to various schools and thus, the rates of enrolments were separately calculated for different social groups of children.

This analysis shows that the overall enrolment rates among SC/ST children (93.42 per cent) were relatively higher than the rates found among the children belonging to the general castes (92.20 per cent). Further, grouping the various blocks into two categories - developed and backward, on the basis of applying certain socio-economic and educational indicators, we found that the differences in enrolment rates of SC/ST and general castes children were remarkably higher in backward blocks than in the developed blocks. The enrolment rates of SC/ST children were 89.83 per cent in the backward blocks as against 98.55 per cent in developed blocks. But the enrolment rates of general caste children were marginally higher (90.34 per cent) than the SC/ST children (89.83 per cent) in the backward blocks, while in the developed blocks the differences in enrolment rates in favour of SC/ST children were two points level. The existing inequalities between general caste and SC/ST children in the utilisation of primary education are mainly caused mainly due to lower level of enrolments of SC/ST girls than general caste girls, particularly in the backward blocks. Otherwise, the Scheduled Castes/Tribes are not lagging behind their upper caste counterparts in the availment of primary education. In fact, the enrolments of scheduled castes and scheduled tribes boys are significantly much higher than general caste boys in both developed blocks and at the district level.

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(ii) Stagnation, Drop-Outs and Retention

The rates of retention have been worked out on a class-wise basis at primary level of education. The retention rate at class I is expected to be 100 per cent. And thus the overall retention rate of children at Class II is worked out to be 90 per cent. However, by the time children reach Class III, the rate of retention begins to decline at 78.29 per cent. The retention in Classes IV and V was found to be 63.49 and 61.02 per cent respectively thereby meaning that 36.51 and 38.98 per cent students respectively failed or had dropped out of the education stream. Finally, only around 66 per cent of those enrolled in Class I reaches Class V.

Inequalities in the retention rate was quite prevalent among boys and girls. The retention rate of boys was significantly higher (47.20 per cent) as compared to that of girls (40.30 per cent). Also the stagnation as well as drop-out rates of girls was somewhat at larger extent as compared to boys. It was estimated that around 21 per cent girls and 17 per cent boys drop out their study before the completion of primary level education. The stagnation rate among girls was 38.98 per cent as against 35.50 per cent for boys.⁹

Differences in the retention rates between the children of general castes and SC/ST were also quite significant in different blocks, and in fact, within the blocks.¹⁰ However, the retention rates of SC/ST children in different classes were significantly higher than of the general caste children.

Also, the differences in the retention rates in favour of SC/ST children in the developed blocks were remarkably much higher than in the backward blocks. The proportion of SC/ST children continuing in primary education is estimated to be 65.89 per cent as against 58.38 per cent of general caste children. However, the retention rates of SC/ST children in developed blocks was (72.22 per cent) much higher than in the backward blocks (61.36 per cent). Thus, the extent of inequality among SC/ST and general caste children was worked out to be 18 points in the developed blocks as against only one point level in the backward blocks with an overall inequality of 7 points.

The performance of Scheduled Castes and Scheduled Tribes children, in terms of their continuing to study in different classes of primary education, seems to be rather significant as compared to the general caste children. Overall drop-out rates are estimated to be around 39 per cent, constituting 43 per cent for general castes and 32 per cent for SC/ST children. The rates of drop-out of SC/ST are significantly at the lowest level in the developed blocks (27.78 per cent) while in the backward blocks they are 39 per cent. In both types of blocks the children dropping out study before completion of the primary level education are relatively much larger among general caste children than among SC/ST groups. In all, the drop-out rates are generally higher before the completion of the third and fourth level of primary educational classes for both the groups of children.

During discussions with officials of education department, parents of SC/ST children and teachers of primary schools, it was revealed that provision of financial assistance in the form of scholarship and free tuition introduced for SC/ST children has been greatly instrumental in increasing their enrolments and retaining them in school regularly. Due to the poor socio-economic condition of SC/ST households, they were generally unable to send their children to avail education. With the availability of scholarship and other financial incentives, a larger number of SC/ST children have found the opportunity to get enrolled in primary schools. Earlier the attraction of the SC/ST children was mainly to avail the scholarship but the level of attendance remained rather low. In fact, most children had enrolled themselves in primary schools mainly to avail the facility of financial assistance. To overcome this problem the schools have fixed a general criterion for the eligibility for availing scholarships and other incentives. The children securing 70 per cent regular attendance in schools are considered eligible for various financial assistance provided for them. This newly introduced practice has certainly improved the attendance rate and the level of retention of SC/ST children.

(iii) Attendance

The analysis¹¹ on the pattern of attendance of children indicated that a large number of children do not attend

school regularly due to one or another reasons. School related problems as well as the family environment of children are the main factors responsible for the irregularity of children's attendance in school. The analysis shows significant differences among different schools located in different blocks and even schools of same block in terms of number of days the schools functioned during a month. A majority of schools in various blocks functioned for 14 to 15 days in a month. Furthermore, it was found that an overwhelming proportion of children, particularly those studying in Class I and II are very irregular in attending classes. In most schools glaring discrepancies were appeared between the attendance figures as per the attendance register for the day and actual physical count of students physically present in the classes on that day. Attendance was generally marked not daily but after an interval of some days for all the preceding days. As per the school records a majority of children (61 per cent) were found to have attended their school for more than 13 days and another 24 per cent for 11-12 days while the attendance of remaining 15 children was below 10 days in a month.

UTILIZATION AND IMPACT OF ROAD TRANSPORT

The impact of transport network in production and distribution system is quite significant in so far as it increases the accessibility to productive resources and physical mobility of raw material, finished goods and factors

of production, promoting competition and hence economic efficiency. It also creates conditions for increasing the scale of production on the one hand and for strengthening of economic linkages on the other. Consequently, the transport can influence the process of growth through bringing changes in attitudes and behaviour of the people by facilitating the dispersal of knowledge and reduction in socio-cultural bottlenecks - taboos and traditionist - which tend to inhibit the adoptions of modern technologies, and the growth and diversification of demand for final goods and services.

Regarding the impact of transport on economic development it may be taken for granted that, in the context of a nation as a whole, creation of transport facilities does induce the process and accelerate the process of growth. But this is not always true for regions or areas covered by the transport network. The extent to which an area, when linked with other areas, benefits or is exploited on account of externalities, depends upon the kinds of economic impulses generated from within the region and the terms of trade of the area with other regions. Thus, while dispersal of the development process essentially requires building up of transport network, the transport linkages may sometimes lead to the accentuation of inter-areas and regional differences in the level of development. There are issues relating to absolute and relative development of particular regions become important. In this context it will be worthwhile to examine how and at what extent the creation of transport

facilities has been effecting the diversification and development of various economic sectors in Uttarakhand.

As has been indicated already in the preceding analysis that the development of road transport network and to link various remote areas and villages with road network has received a significant importance and priority under the past development plans of Uttarakhand. During the period of Seventh Five Year Plan, the share of expenditure on transport was 15.34 in the total expenditure of Rs.1213.45 crores. During Eighth Plan, approved outlay for transport sector was Rs.297.50 crore. It also noted that proposed outlay for Ninth Plan has increased to Rs.1052 crore accounting for two and a half folds higher than the plan expenditure incurred during last plan period. Also the share of outlay for transport sector of the total plan outlay for Ninth Plan accounted around 24 per cent. During Eighth Plan, 1640 Kms. road was constructed and 1154 kms. road was reconstructed and repaired. The target of Ninth Plan is to construct additional road length of 1705 kms. in addition to repair of 1168 kms. road. Thus we find considerable efforts have been undertaken towards the development of road network in this socio-economically backward region so as to link it with rest of the areas on one hand and to bring improvements in the life-style of local people on the other.

However, the impact of developing road transport network on the socio-economic development and the quality of life of

an area specific mainly determined by the motives and frequencies of the utilization of available transport facility by different socio-economic groups of people. Since the transportation system by itself may not lead to development. It is the utilisation of transport facilities for various productive and welfare enhance purposes which will determine the contribution of developing transportation to the general development. A study undertaken in the district Almora¹² to examine the pattern and purpose of the utilization of transport facility by local people, and its impact on the pattern of economic development revealed that expansion of road transport, consisting of 28 kms. in length, has certainly provided an opportunity to about 66 local people to establish different types of shops and establishments. Nearly 43 per cent owners of different establishments located on the sample road felt that they would not have started any activity in the absence of the road while 29 per cent reported that their turnover has increased substantially and another 7 per cent have expanded their business by introducing new items for sale. Similarly, a sizeable number have been able to establish better links within areas nearby and have, therefore, enlarged the very size of their market. The artisan and processing units, however, did not feel much benefits though they recognised the utility of road for travel out of the village.

In terms of the utilization of road transport facility by the local people it was found that from each households

atleast one member is making on an average one visit every month to the urban centres or community development block for various purposes. Households in all the land holding groups have been utilizing the road transport so far as their visits out of village are concerned. However, within the overall pattern of visits for various purposes, the frequency of visits were highest among the members of landless households.

Examining the purpose of such visits, the study found that purchase of goods for domestic use is the largest single reason accounted for around one-third of the total visits. Purchase of raw material for production of cottage products and disposal of such products come next, but visits for these purposes are mainly observed in the case of landless household. The smaller land holding size and poor agricultural condition in the area are reflected in the small proportion (11 per cent) of the visits to the market to purchase agricultural inputs like seeds and fertilizers. Around 9 per cent of the household members are utilizing transport facilities for availing the medical facilities.

Regarding overall economic impact of developing road transport network in the region a study¹³ revealed that only a marginal impact has been noticed in production and productivity of agriculture in the linked village with roads which even cannot be attributed to the availability of road transport alone. Because the productivity has also been increased equally in non-linked village also, though an increasing trend has been noticed in productivity in the

linked village, while in the non-linked village it has shown a declining trend. A slight shift in favour of cash crops was noticed after the emergence of road transport in the linked village, but no impact was seen in the extent of agricultural produce marketed. New practices and crops seem to have been brought to the village by transport, but their productive results have been mainly absorbed in improving consumption rather than sale for profit.

It is significant to note that in all major crops, except paddy, the yield levels have registered an increase in the village connected with road while they have declined in the non-linked village. The cropping pattern of both the villages is heavily dominated by foodcrops, particularly cereals. But non-food crops have somewhat larger percentage of areas in the linked village than in the non-linked one. What is important to note is that this difference has mainly arisen in the period after the construction of road, during which the share of cash crops has increased by around 3 percentage points in the village on the road while it has shown a declining trend in the off-the-road village. Current harvest prices of crop-output and wages of agricultural labour, however, are the same in case of both the villages. It looks that markets for produce and labour have a wider coverage and their prices are not determined at the level of a single village itself.

The non-agricultural activities were found to have stagnated or declined rather than increased with the

introduction of road transport in the village. The village away from the road has more establishments and workers in the non-agricultural activities than the one on the road, no doubt, because the former is a larger village. But the number of non-agricultural establishments and employment has increased in the linked village while it has decreased in the non-linked village. Transport thus seems to have introduced goods produced outside, particularly in the urban areas, as substitutes for locally produced ones, and, no alternative avenues, in terms of other non-agricultural activities, have emerged to take care of artisans so displaced. Significant magnitude of activity is found to have emerged on the roadside, mainly in the form of trading establishments. But the main linkage these establishments provide to the economy of the village is by way of supplying consumption goods produced elsewhere. Thus there is very weak production linkages of these activities with the village.

The road seems highly underutilized particularly because of the limited number of bus services. Non-passenger traffic is only occasional and limited. The villagers certainly make larger number of visits to the nearest market centres located at the road heads, due to the availability of bus transport facility. But most of these visits are again for purposes of buying consumption goods. The frequency of villagers contacts with the local development officials has only marginally increased with the introduction of road transport.

Thus the impact of road transport is more visible and direct on the consumption economy and only marginal and indirect in the production economy of the villages in Uttarkhand. It looks that the limitations of productive potentials render the road transport mainly a consumption item in the resource poor region. The increasing absorption of consumption goods produced outside Uttarakhand is made possible not so much by increase in income generation in local production as by remittances from out-migrants from the area. And increasing consumption requirements due to growing contacts with outside region, force more and more able bodied persons to migrate out of the area in search of employment and income opportunities, which, in turn is facilitated by the availability of transport facilities. By and large, this is the pattern of impact of the impact of road transport, visible in the backward economies of the remote and geographically enclaved areas of Uttarakhand.

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